

Note: “e. None of these” is a choice for every question, in case the answer is not given or there is a problem with the question.

1. Find the positive difference between the LCM and GCF of 36 and 48.
a. 152 b. 143 c. 1716 d. 132
2. Solve for x: $0.\overline{1} + 0.\overline{2} + 0.\overline{3} + 0.\overline{4} + x = 1$
a. $0.\overline{1}$ b. $-0.\overline{1}$ c. 1.0 d. 0
3. Simplify: $\left(\frac{3(12-7)}{2+3+1}\right) \cdot 6 + 11$
a. 51 b. 29 c. 26 d. 41
4. The ratio of two numbers $m:n$ is 3:4. Their sum is 21. What is mn ?
a. 84 b. 60 c. 96 d. 108
5. The weight of a gold bar is two-thirds of its weight and another 5 pounds. What is the weight of the gold bar?
a. $5\frac{2}{3}$ lb b. 24 lb c. 15 lb d. 18 lb
6. What is the sum of the complement of the supplement of 135° and the supplement of the complement of 35° ?
a. 95° b. 170° c. 124° d. 180°
7. The sixth grade won the prize for the most cans of food collected in January. They sent 140 cans to a food pantry. They still have 135 cans to distribute. What percent (to the nearest whole percent) of the total cans have they already donated?
a. 50% b. 45% c. 51% d. 48%
8. Find the area of a triangle with vertices at (6,3), (-1,3), (-1,-4).
a. 49 square units b. 22.5 square units c. 14 square units d. 24.5 square units
9. Find the units digit of $(3^{147})(7^{123})$
a. 7 b. 1 c. 3 d. 9
10. Barret's watch said it is 8:15. What is the measure of the smallest angle between the minute and hour hands of his watch at that time?
a. 210° b. 157.5° c. 125° d. 150°

11. The gym has a row of 6 ON-OFF switches on the wall. How many different arrangements of ON and OFF can be made?

- a. 60 b. 15 c. 720 d. 120

12. A purse contains 3 dimes, 4 quarters, and 5 half-dollars. Emma and then Emma Rose both reach in and pull out a coin. What is the probability that Emma gets a quarter and then Emma Rose gets a dime?

- a. $\frac{7}{11}$ b. $\frac{1}{11}$ c. $\frac{7}{12}$ d. $\frac{1}{12}$

13. DCLXVI + CDXLIV =

- a. MXXIX b. MDXVI c. DCXXIX d. MCX

14. Areebah bought a present for her sister for her birthday. She paid \$29.25, not including tax. This sale price is 22% off the regular price. What is the regular price?

- a. \$ 13.30 b. \$ 22.81 c. \$ 37.50 d. \$ 64.35

15. The exterior angle of a polygon is formed by one edge of the figure and the extension of an adjoining edge. What is the sum of the 8 exterior angles of an octagon?

- a. 105° b. 240° c. 360° d. 800°

16. Lead for Abby's mechanical pencil comes 12 to a pack and is 0.5mm thick. If laid out side by side to form a rectangle, how many more leads will be needed to form a rectangle 1 cm wide?

- a. 4 leads b. 8 leads c. 10 leads d. 6 leads

17. Find the value of:
$$\frac{1}{1 - \frac{1}{1 + \frac{1}{1 - \frac{1}{1 + 1}}}}$$

- a. $\frac{4}{5}$ b. $\frac{3}{4}$ c. $\frac{2}{3}$ d. $\frac{3}{2}$

18. If $4x$ is the reciprocal of $\frac{1}{x^3}$, find the value of x .

- a. 2 b. ± 4 c. $\frac{1}{2}$ d. ± 2

19. Simplify: $-2^2[3 - (-2 \cdot 4) \cdot (\frac{1}{2} + \frac{3}{4})]$

- a. -28 b. 52 c. 28 d. -52

20. What is the sum of 20% of 30% of 40% of 100 and $\frac{1}{4}$ of $\frac{2}{3}$ of $\frac{1}{6}$ of 72?

- a. 3.96 b. 4.4 c. 1.92 d. 5.6

21. 12 arks = 4 barks. 6 carks = 5 barks. 2 carks = 7 darks. How many arks will equal 7 darks?

- a. 8 arks b. 5 arks c. 6 arks d. 4 arks

22. 4 pounds 13 ounces added to 7 pounds 6 ounces less 2 pounds 5 ounces results in what weight?

- a. 9 lb 14 oz b. 14 lb 8 oz c. 10 lb 2 oz d. 12 lb 9 oz

23. Reece cut a 9" by 12" sheet of construction paper in half, then stacked the halves together. He repeated this procedure 3 more times. How large an area was one of the pieces of paper?

- a. 8.2 in^2 b. 7.25 in^2 c. 6.75 in^2 d. 5.5 in^2

24. A regular polygon has an interior angle measure of 108° . How many diagonals does this polygon have?

- a. 6 b. 5 c. 4 d. 10

25. Simmons' PTO has agreed to turn the courtyard into a swimming pool. The area around the pool will be a concrete patio/walkway measuring 6 feet wide. The courtyard is a rectangle 50 feet by 72 feet. What is the surface area of the pool?

- a. 2904 sq ft b. 2520 sq ft c. 2280 sq ft d. 1800 sq ft

Tiebreakers

1. If a woodchuck could chuck 15 pieces of wood in 25 minutes, and he has 7 hours to chuck the wood, how much wood could a woodchuck chuck if a woodchuck could chuck wood?

2. How many proper factors does 48 have?

3. $405_6 - 345_6 =$ what in base 10?